

2007-09-24 [58049-00035] Sequence Listing.ST25
SEQUENCE LISTING

<110> Korea Research Institute of Bioscience and Biotechnology
<120> MULTIPLE STRESS-INDUCIBLE PEROXIDASE PROMOTER DERIVED FROM
IPOMOEA BATATAS
<130> 58049-00035
<140> 10/597,945
<141> 2006-08-11
<160> 30
<170> PatentIn version 3.3
<210> 1
<211> 3945
<212> DNA
<213> Ipomoea batatas

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| ttgaacccat | taatcgaata | attgacatat | tagataaact | tagccatcat | atgacatttg | 1440 |
| atcatgattg | atgattttta | aaaaataaaa | acaaaattat | gaaagggtaa | tgaaatattt | 1500 |
| taaaaaaatt | atgtaaaccc | tgtaatctag | taatctgtac | aataataatt | ttgtttcaac | 1560 |
| taagaggatg | ttggcaaaag | tataattaaa | cttgtgatct | tcgtacaata | attatgcttc | 1620 |
| acgcactcaa | ctagtcacat | ctttccaggc | aaaattttact | tttctatgaa | tatgagaagt | 1680 |
| tccatctatg | gaaataacgg | attattttatc | taattttcaa | attctatata | tatagtctcg | 1740 |
| agtggaacaa | aaatagaact | aatttgaaca | aatcaaagtc | taagaaaata | atacatgctt | 1800 |
| tagcagcaaa | aataagaatg | gtactatact | taatcctcat | catagtcttc | aaccctgcat | 1860 |
| atagcacact | taacatttta | tattcaaata | tactttaatt | tagtcatgat | aatacaactc | 1920 |
| acctactcca | ttatagccga | taatacaact | cacctagcta | ctccattata | gtccaacaat | 1980 |
| atcaaataaa | taaaatagta | atggtgactt | aaagggctga | atccaacata | tattctgaca | 2040 |
| tttaaaaatg | ctaacgtacg | gtagattag | tataatgaaa | taaagttaat | cattctctat | 2100 |
| atgtgatgat | ggtaattagt | atcatggtaa | ggtgttttat | cgtggcagca | tgagtgcag | 2160 |
| acaaacgcat | atattattat | taaaacaaaa | tagtactcca | atcataataa | attatcttat | 2220 |
| attatattgc | caacaattaa | aaattcaaat | tagaacaaat | taaatctcag | tttgctttat | 2280 |
| tatattatta | tcaacaataa | taatttaata | ctgatcgaag | aactttccct | ttcaagttct | 2340 |
| ctattttaagg | aagcctgaga | agccattaat | cctcatcatc | agctcgacca | ctcatttctt | 2400 |
| cttcatactt | cctttgctgt | gataatcatc | atcatggctt | cctttgtcac | tcggctcagc | 2460 |
| ctggccctta | gcttcatcgc | cctagcccta | gctggcttct | ccatttacca | gaatacccat | 2520 |
| acagccatga | aagggcagct | taagctcacc | ccaaagtggc | tgctagacaa | cactctagag | 2580 |
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| gaagactgca | tattctccgc | cgtaaggaa | gtggtggacg | ccgccattga | tgacagaaacc | 2700 |
| cgcattgggtg | cttccctcat | tcgcctcttc | ttccatgact | gctttgttga | tgtacgtacg | 2760 |
| ctaattttgt | acgatgatgt | tttttttttt | tttttttttt | ttcccactgc | attatattag | 2820 |
| gaaattaaac | agattgaaat | gtgtgttatt | aatgtattat | ctgcagggtt | gtgacgcagg | 2880 |
| tcttctacta | aacgatacac | ctactttcac | cggagaacag | accgccggcg | gcaataataa | 2940 |
| ctcagtcaga | ggttttgagg | tgatacaaca | agctaaagag | aatgtgataa | ccaaatgtcc | 3000 |
| ctacatacaa | gtatcttgtg | ccgacatctt | atccattgct | gcccgatgatt | ctttccagag | 3060 |
| agtaagtcca | tttattttcta | aagggtgaaa | ttaataagaa | caagaatcca | aacaaataac | 3120 |

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| aacgtacacc gtgactctgg gaagactcga tgcaagaacg gcgaacctta ccggagctaa | 3300 |
| cacccaactc gtcggaccaa acgaggaatt ggcatcgcaa gtcgagaaat ttgcggcgaa | 3360 |
| agggttctcc gaaacggagc tagtcgcctt gttaggtggt cacacggttg ggttttcgag | 3420 |
| atgtccgctt ttatgcgttc ccattttcat caatcccgcc cgggcctcca cgctgcaatg | 3480 |
| caactgtccg gtgagtcctg acgacaccgg gctgggtggc ctggacccca ctccgttgac | 3540 |
| gtgggaccaa agtttttact ccgacgtggc taacggacaa gggcttctgt tctccgacaa | 3600 |
| cgagctgatg aatagcaaca ccaccagcgc cgccgttagg aggtacaggg acgagatgga | 3660 |
| cgcttttctc gccgatttcg ccgccgccat ggtgaagatg agcctcctgc cgccgtcccc | 3720 |
| cggagtggag ctcgaaatcc gagaggtttg cagcgagggt aatgccaaca cagttgcac | 3780 |
| catgtgaagt tcgttcccat cgacatcaat aacgtctgtg attctgtgaa agttttactc | 3840 |
| ggactgtgaa gaattttcac tttctgttgt ttctgaaata aaaaagattt ttttttatg | 3900 |
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 <213> Ipomoea batatas

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| gaagaacttt ccttttcaag ttctctatct aaggaagcct gagaagccat taatcctcat | 120 |
| catcagctcg accactcatt tcttcttcat acttcctttg ctgtgataat catcatc | 177 |

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| aattagaaca aattaaatct cagtttgctt tattatatta ttatcaacaa taataattta | 180 |
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| aatcctcatc atcagctcga ccactcattt cttcttcata cttcctttgc tgtgataatc | 300 |
| atcatc | 306 |

<210> 5
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 <213> Ipomoea batatas

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| aattagaaca aattaaatct cagtttgctt tattatatta ttatcaacaa taataattta | 180 |
| atactgatcg aagaactttc cctttcaagt tctctattta aggaagcctg agaagccatt | 240 |
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| atcatc | 306 |

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 <213> Ipomoea batatas

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| atcatggtaa ggtgttttat cgtggcagca tgagtgcacg acaaacgcat atattattat | 180 |
| taaaacaaaa tagtactcca atcataataa attatcttat attatattgc caacaattaa | 240 |
| aaattcaaat tagaacaat taaatctcag tttgctttat tatattatta tcaacaataa | 300 |
| taatttaata ctgatcgaag aactttccct ttcaagttct ctatttaagg aagcctgaga | 360 |
| agccattaat cctcatcatc agctcgacca ctcatttctt cttcatactt cctttgctgt | 420 |
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| gaagttccat ctatggaaat aacggattat ttatctaatt ttcaaattct atatatatag | 120 |
| tctcgagtgg aacaaaaata gaactaattt gaacaaatca aagtctaaga aaataataca | 180 |

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| tgcttttagca gcaaaaataa gaatggtact atacttaatc ctcatcatag tcttcaaccc | 240 |
| tgcatatagc acacttaaca ttttatattc aaatatactt taatttagtc atgataatac | 300 |
| aactcaccta ctccattata gccgataata caactcacct agctactcca ttatagtcca | 360 |
| acaatatcaa atgaataaaa tagtaatggt gacttaaagg gctgaatcca acatatattc | 420 |
| tgacatttaa aaatgctaac gtacgggttag attagtataa tgaaataaag ttaatcattc | 480 |
| tctatatttg atgatggtaa ttagtatcat ggtaagggtgt tttatcgtgg cagcatgagt | 540 |
| gcatgacaaa cgcatatatt attattaaaa caaaatagta ctccaatcat aataaattat | 600 |
| cttatattat attgccaca attaaaaatt caaattagaa caaattaaat ctgagtttgc | 660 |
| tttattatat tattatcaac aataataatt taatactgat cgaagaactt tccctttcaa | 720 |
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 <213> Ipomoea batatas

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| catttaatta aattttctatc ctcatgttga acccattaat cgaataattg acatattaga | 180 |
| taaacttagc catcatatga catttgatca tgattgatga tttttaaaaa ataaaaacaa | 240 |
| aattatgaaa gggtaatgaa atatttttaa aaaattatgt aaacctgtga atctagtaat | 300 |
| ctgtacaata ataattttgt ttcaactaag aggatgttgg caaaagtata attaaacttg | 360 |
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| tttcaaattc tatatatata gtctcgagtg gaacaaaaat agaactaatt tgaacaaatc | 540 |
| aaagtctaag aaaataatac atgcttttagc agcaaaaata agaatggtac tatacttaat | 600 |
| cctcatcata gtcttcaacc ctgcatatag cacacttaac attttatatt caaatatact | 660 |
| ttaatttagt catgataata caactcacct actccattat agccgataat acaactcacc | 720 |
| tagctactcc attatagtcc aacaatatca aatgaataaa atagtaatgg tgacttaaag | 780 |
| ggctgaatcc aacatatatt ctgacattta aaaatgctaa cgtacggtta gattagtata | 840 |
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| | |
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| <211> 1467 | |
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| <213> Ipomoea batatas | |
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| ataaaaaata ttgggtcaaa ataccttacc gatttttccc aaatattcac ggaacttact | 180 |
| gccagaatct accctgcttt ttcttttcac tattttcaca actataagca tatatgggca | 240 |
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| attgatgatt tttaaaaaat aaaaacaaaa ttatgaaagg gtaatgaaat attttaaaaa | 540 |
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| gatgttggca aaagtataat taaacttggtg atcttcgtac aataattatg cttcacgcac | 660 |
| tcaactagtc acatctttcc aggcaaaatt tacttttcta tgaatatgag aagttccatc | 720 |
| tatggaaata acggattatt tatctaattt tcaaattcta tatatatagt ctcgagtgga | 780 |
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| caaaaataag aatgggtacta tacttaatcc tcatcatagt cttcaaccct gcatatagca | 900 |
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| tgaataaaat agtaatgggtg acttaaagggt ctgaatccaa catatattct gacattttaa | 1080 |
| aatgctaacg tacggttaga ttagtataat gaaataaagt taatcattct ctatatttga | 1140 |
| tgatggtaat tagtatcatg gtaagggtgtt ttatcgtggc agcatgagtg catgacaaac | 1200 |
| gcatatatta ttattaaaac aaaatagtag tccaatcata ataaattatc ttatattata | 1260 |
| ttgccaaaca ttaaaaattc aaattagaac aaattaaatc tcagtttgct ttattatatt | 1320 |
| attatcaaca ataataattt aatactgac gaagaacttt ccttttcaag ttctctattt | 1380 |
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<210> 10
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| ttaaaacaaa atagtactcc aatcataata aattatctta tattatattg ccaacaatta | 1740 |
| aaaattcaaa ttagaacaaa ttaaattctca gtttgcttta ttatattatt atcaacaata | 1800 |
| ataatttaat actgatcgaa gaactttccc ttccaagttc tctattttaag gaagcctgag | 1860 |
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<210> 11

<211> 2433

<212> DNA

<213> Ipomoea batatas

<400> 11

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| acttcaagct ctttatcccg taggctgcaa caacataacg acataacgac cactgggcaa | 180 |
| gggcatttac agccaccggt gggccaatca aggtcctcct cactcacttt agaaactaag | 240 |
| ggtttgaaaa catgatcttt ccttcagttt ttcttacaac aaatcattca ctttggacac | 300 |
| atttcacaat tgagtccaat acttaaaccg gctacttcat tagccctga aggattttta | 360 |
| aaaaaacttt cactgcccgc aggtcttca aacatctttt cctcattatc aagtgaggca | 420 |
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| acacttatac tactccaaaa attatgaaat ttttatggta gcttctacac ttatagaact | 1080 |
| acatgtataa aaaatattgg gtcaaaatac cttaccgatt tttcccaaat attcacggaa | 1140 |
| cttactgcca gaatctaccc tgctttttcc tttcactatt ttcacaacta taagcatata | 1200 |
| tgggcataaa tatgacatga acatgcatga accaatgcag ggtgaaagta agattgaata | 1260 |
| tactgatact acaattaact aatgataaag tataactttt gtaaaaaatt tgattttttt | 1320 |
| ttttgatgaa ttcataact ccaaagattt tcctcattta attaaatttc taccctcatg | 1380 |

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| | |
|--------------------------------------------------------------------|------|
| ttgaacccat taatcgaata attgacatat tagataaact tagccatcat atgacatttg | 1440 |
| atcatgattg atgattttta aaaaataaaa acaaaattat gaaagggtaa tgaaatattt | 1500 |
| taaaaaaatt atgtaaaccc tgtaatctag taatctgtac aataataatt ttgtttcaac | 1560 |
| taagaggatg ttggcaaaag tataattaaa cttgtgatct tcgtacaata attatgcttc | 1620 |
| acgcactcaa ctagtccat ctttccaggc aaaatttact tttctatgaa tatgagaagt | 1680 |
| tccatctatg gaaataacgg attattttatc taattttcaa attctatata tatagtctcg | 1740 |
| agtggaacaa aaatagaact aatttgaaca aatcaaagtc taagaaaata atacatgctt | 1800 |
| tagcagcaaa aataagaatg gtactatact taatcctcat catagtcttc aaccctgcat | 1860 |
| atagcacact taacatttta tattcaaata tactttaatt tagtcatgat aatacaactc | 1920 |
| acctactcca ttatagccga taatacaact cacctagcta ctccattata gtccaacaat | 1980 |
| atcaaataaa taaaatagta atgggtgactt aaagggctga atccaacata tattctgaca | 2040 |
| tttaaaaatg ctaacgtacg gttagattag tataatgaaa taaagttaat cattctctat | 2100 |
| atttgatgat ggtaattagt atcatggtaa ggtgttttat cgtggcagca tgagtgcag | 2160 |
| acaaacgcat atattattat taaaacaaaa tagtactcca atcataataa attatcttat | 2220 |
| attatattgc caacaattaa aaattcaaat tagaacaat taaatctcag ttgcttttat | 2280 |
| tatattatta tcaacaataa taatttaata ctgatcgaag aactttccct ttcaagttct | 2340 |
| ctatttaagg aagcctgaga agccattaat cctcatcatc agctcgacca ctcatctctt | 2400 |
| cttcatactt cctttgctgt gataatcatc atc | 2433 |

<210> 12
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<220>
 <223> GSP1 promoter

| | |
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| <400> 12 | |
| ctgagccgag tgacaaagga agccat | 26 |

<210> 13
 <211> 22
 <212> DNA
 <213> Artificial

<220>
 <223> AP1 promoter

| | |
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| <400> 13 | |
| gtaatacgac tcactatagg gc | 22 |

<210> 14
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<212> DNA
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 <220>
 <223> GSP2 promoter

 <400> 14
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 <210> 15
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 <400> 15
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 <210> 16
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 <220>
 <223> exon promoter

 <400> 16
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 <210> 17
 <211> 30
 <212> DNA
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 <220>
 <223> intron promoter

 <400> 17
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<210> 20
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<210> 21
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<210> 22
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<400> 22
gccaaagcttg cttcacgcac tcaact
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<210> 23
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<400> 23
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33

<210> 24
<211> 34
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<223> reverse primer for -2433, 1934, 1467, 1199, 818, 433, 366, 306,
177 and 110 deletion promoter

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| <210> 25 | |
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| <213> Artificial | |
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| <223> forward primer for -366 deletion promoter | |
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| <210> 26 | |
| <211> 26 | |
| <212> DNA | |
| <213> Artificial | |
| <220> | |
| <223> forward primer for -306 deletion promoter | |
| <400> 26 | |
| tttctgcagt aaggtgtttt atcgtg | 26 |
| <210> 27 | |
| <211> 25 | |
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| <213> Artificial | |
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| <223> forward primer for -177 deletion promoter | |
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| <211> 24 | |
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| <210> 29 | |
| <211> 19 | |
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| <223> forward primer for NPTII | |
| <400> 29 | |
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21